Rules for Safe Operation

Important: Do not attempt to operate the CleanStation™ until you have read thoroughly and understand all instructions and safety rules contained in this manual. Failure to comply may result in personal injury.

- **As a normal industry safety practice, be sure the machine has been plugged into a 115VAC ground fault interrupt outlet.**
- Protective neoprene gloves, as well as protective eye goggles should be worn when cleaning parts in the CleanStation™. Having a source of fresh water nearby is helpful to wash off any solution that splashes on exposed skin or parts. During normal operation of the CleanStation, the tank and lid will become hot (up to 150F). Care should be taken to avoid exposed skin touching these hot surfaces causing a burn.
- Use stainless steel or plastic tongs to insert and remove parts from the CleanStation™ tank. **DO NOT use aluminum tongs.**
- Ambient lighting in the area where CleanStation™ is setup and used needs to be sufficient for the contents of the CleanStation to be seen with ease. Artificial lighting that achieves an intensity of 200 to 300 Lux is usually sufficient.
- When the CleanStation™ is cleaning parts, it should **NOT** be left unattended.
- When operating the CleanStation™, facing the front provides an unobstructed view of the control panel display, as well as direct access to the power switch in case quick shutdown is necessary. All normal operations should be performed facing the front, with the exception of accessing the drain valve, which is located on the back of the CleanStation™.
- CleanStation™ weights approximately 63lb empty and should **NEVER** be moved when liquid is present in the tank. Sections 9 and 10 of the Operations guide detail how to properly drain and dispose of used chemical solution prior to moving the CleanStation™.
- CleanStation™ is designed for indoor use only, at room temperatures between 65F and 80F. CleanStation will not operate at a temperature at or below 40F.
- CleanStation™ is designed for cleaning with WaterWorks Soluble Concentrate (or other suitable substitute recommended by Stratasys, Inc. or PM Technologies), to clean P400-ABS modeling and P400-SR support material. It is **NOT** designed for cleaning or heating food, cosmetic or medical products, nor metal or other non-water soluble plastic parts. Do not use chemicals that are not pre-qualified by PM Technologies, this will result in voiding the warranty.
- CleanStation™ should **NOT** be used in an explosive atmosphere. Normal internal sparking of the pump motor could ignite fumes.
- CleanStation™ has a working dimension inside the tank of 10 inch by 11 inch by 12-1/4” inch. Be careful not to insert too many parts (to be cleaned) so as to overflow the level of the tank.

Technical Specifications

- Outside machine dimensions: 19-1/4 inch height by 23-1/2 inch width by 21-1/2 inch depth
- Inside tank dimensions: 10”d x 11”h x 12-1/4”w
- Tank holds 6 gallons of water
- Weight (empty): 63lb
- Power consumption: 12amps at 115VAC
- Fuses: Class G fuse, Type SC, 15 Ampere
- Operating temperature: 150F

Installation

1. Selecting a location

Select a clean, dry, well-lighted area with a minimum clearance of six inches between the CleanStation™ and any adjacent walls. It is especially important to select a level surface, due to liquid levels in the tank.

The ideal room temperatures for the system are between 65F and 80F.

2. Power requirements

The CleanStation™ requires 115VAC, 60Hz, 15amp service. **As a normal industry safety practice, a ground fault interrupt outlet must be used.**

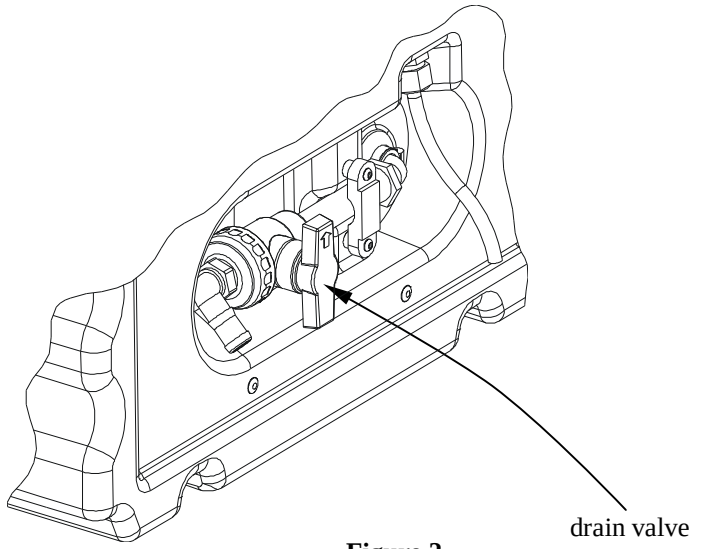


Figure 2

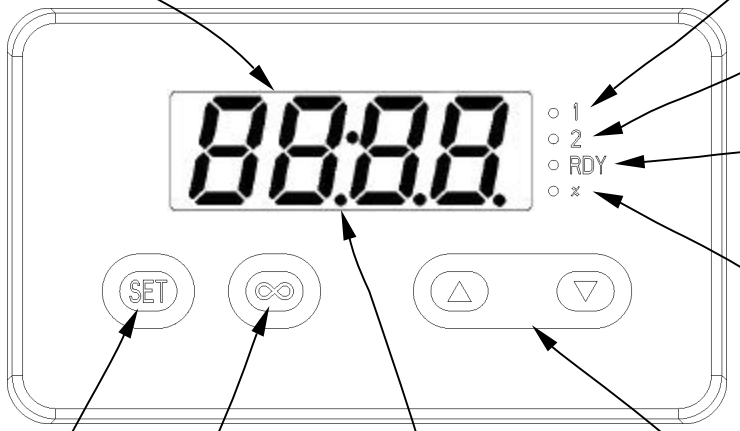
3. Connecting the drain

The CleanStation™ drain is located at the rear of the unit (see Figure 2). Install a standard 3/4” inside diameter hose to the 3/4” barbed fitting attached to the drain valve.

4. To operate the system

Please review the previous section entitled "Rules for Safe Operation", then proceed to the next section "Operation".

Operation



Four Digit, LED Display:

Lit when heater is on

Lit when pump is on

Pump and Heater enable indicator
Lit when enabled.

Not used

Set key

Infinity key
Returns to the Home Page.

Press and hold the Infinity Key for about 2 seconds to enter the Operations Page, where hours and minutes can be changed.

Timer Indicator
Colon blinks when timer is timing

Up and Down keys
On the Home Page, adjusts the set point while holding Set Key & pressing up or down arrow keys. Machine must be running while this is done.

Also used to increase or decrease hours and minutes in the Operations Page.

Operation

1. Necessary supplies to operate

- Protective neoprene gloves, as well as protective eye goggles should be worn when cleaning parts at the CleanStation™. Having a source of fresh water nearby is helpful to wash off any solution that splashes on exposed skin.
- Use stainless steel or plastic tongs to insert and remove parts. **DO NOT use aluminum tongs.**
- WaterWorks Soluble Concentrate P400SC, 1.05lb (1/2 of a 2.1lb bottle).
- Fresh water (ambient temperature), approximately 6 gallons.

2. Adding water to the tank

Verify the drain valve on the back of the unit (see Figure 2) is closed, that the power cord is unplugged, and that a drain line has been securely installed as described in the Installation instructions, step 3. Fill the tank until the water is one inch from the top of the tank (approx. 6 gallons). Try to anticipate the volume of parts being cleaned; adding too many parts will cause the water level to overflow. To solve the potential problem reduce the volume of water initially being added.

Note that there is a level switch approximately 1 inch below the top of the tank. The CleanStation™ will not operate if the water level drops below this switch.

3. Powering up the system

Verify the power switch (see Figure 3) on the front panel is off by depressing the right side of the switch. **As a normal industry safety practice, plug the power cord into a 115VAC ground fault interrupt outlet** and turn the power switch on by pressing the left side of the switch. The controller display will light. The display will first show Sd , then Prot , then 0000 which is the time remaining and is also where the **"Home Page"** is located. To display the current water temperature, press and release SET on the controller (see Figure 3). **The OFF that is seen when pressing and holding SET is the low temperature set point and must remain off to avoid damaging the machine.**

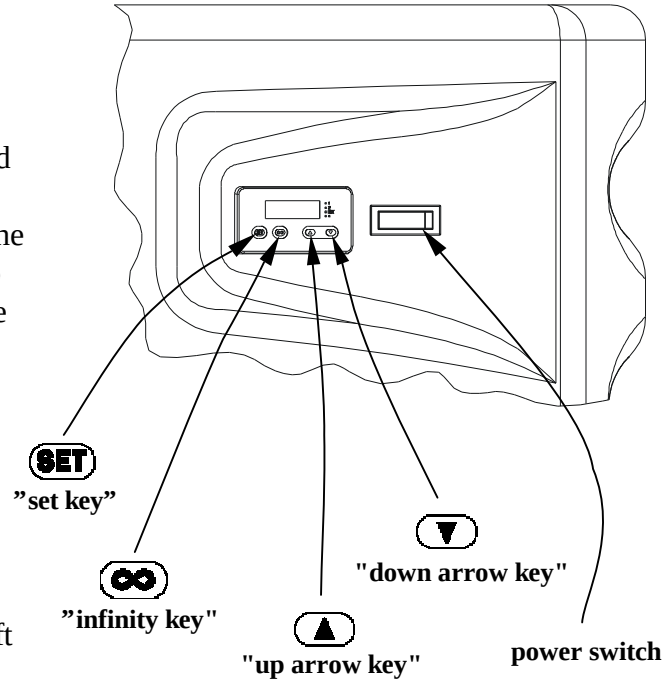


Figure 3

Operation (continued)

4. Start the cleaning cycle

IMPORTANT: Once the system is started, immediately proceed to the next step of adding concentrate; it is **very important** to add the WaterWorks Soluble concentrate **before** the **water gets too warm (86F)**. Failure to do this may cause the chemical to have an adverse reaction with the water.

To start the CleanStation™ push (▼) on the controller (see Figure 3).

The CleanStation™ will continue to run until the timer counts down to zero, at which time the system will shut off automatically. Pressing (▲) will manually stop the cleaning cycle.

IMPORTANT: To immediately power off the CleanStation™ (in case of emergency), turn the power switch off and unplug the power cord.

5. Temperature setting

The controller is preset to heat and maintain the water temperature at 150F (recommended by Stratasys) **WARNING: running the machine above 150F will void the warranty**. To change this setting the machine must be running; if it is not running press (▼) to start the machine. **WARNING: if the machine isn't running when changing temperature you may damage the heater.** Then press and hold (SET) and use (▲) or (▼) to select the desired temperature. Parts are most efficiently cleaned with water temperature at or near 150F.

Changing any parameter other than time or heat (do not exceed 150 degrees) Viods the warranty.

6. Timer (run time) setting

The controller is preset to run for four hours. Most parts take one to two hours to clean, but varying levels of geometric complexity can increase (or reduce) the time necessary. To set the run time different from that preset:

(1) Press and hold the (∞) for 2 seconds. When OPEr is displayed release the (∞).

(2) Press (▼) to display hour hour and minutes Min.

(3) Press and hold (SET) while using the (▲) and (▼) keys to adjust the desired run time.

(4) Press (∞) to exit the menu.

Operation (continued)

7. Cleaning parts

IMPORTANT: Always wear neoprene safety gloves and eye protection while handling concentrate. Follow the instructions on the bottle of solution concentrate from Stratasys. Please review the MSDS provided by Stratasys.

(1) Carefully open one 2.1lb bottle of WaterWorks Soluble Concentrate P400SC. **Slowly** add 1/2 of the bottle into the tank while the pump is recirculating. If solution is not in granular form, break it up so that it can be added at a consistent rate. **ALWAYS add concentrate to water, NEVER add water to concentrate.**

(2) Wait five minutes (for most of the concentrate to dissolve).

(3) Place parts directly into the tank or basket.

(4) Check the tank periodically. If the tank level drops significantly one or two inchs due to evaporation, add more water. **DO NOT** add more cleaning solution.

(5) If the part or parts will not fit inside the basket but, will fit inside the tank, the basket can be removed from the lid by removing the four 10-32 x 3/8" stainless screws. Reinstall the screws into the lid for later use.

8. Removing parts

IMPORTANT: Always wear neoprene safety gloves and eye protection while removing parts from the tank.

Parts may also be removed by using stainless steel or plastic tongs. **DO NOT use aluminum tongs.** Rinse parts with water until their surfaces do not feel slippery. Dry parts with paper towels or let air-dry.

The solution may be used for cleaning additional parts. Cleaning times are faster with fresh cleaning solution. Change the solution whenever the water gets too dark (coffee color) or cleaning times become noticeably longer.

Operation (continued)

9. Disposal of soluble solution

Method 1: Dilution

You may dispose of used solution by pouring it down the drain **while simultaneously** running tap water from the faucet. A 5-to-1 ratio (5 parts water to 1 part solution) is required to reduce the pH content to typical wastewater standards. Check local requirements and modify this ratio accordingly.

Method 2: Neutralization

Malic acid may be used to neutralize the pH content of the solution. Using neoprene safety gloves and protective eye goggles, slowly add 270 ml of malic acid to the tank before draining. Litmus paper (or an alternative pH indicator) may be used to determine if the pH value of the solution is within local wastewater requirements. An alternative would be to drain the solution into a container big enough to handle the full capacity of CleanStation™. At that point mix in 270 ml of malic acid and dispose.

The Stratasys soluble solution is specially formulated to be safely disposed of by standard wastewater disposal procedures. PM Technologies and Stratasys cannot anticipate local, state or international regulatory statutes. PM Technologies and Stratasys recommend that disposal procedures be verified by the proper authorities in your region. PM Technologies and Stratasys cannot be held liable if the solution is not disposed of properly.

10. Draining the tank

To drain the tank, check to make sure the power cord is unplugged and that a drain line is securely connected to the valve. Open the drain valve until all of the water has emptied. Close the drain valve when not in use. If neutralizing with malic acid, a filmy residue may remain in the tank which may be wiped off with paper towels.

Maintenance

IMPORTANT: Always unplug the CleanStation™ from its power source before doing any maintenance.

• There may be a periodic need to clean the pump suction strainer or manifold that distributes the circulating water. If you notice a significant decrease in the circulation of water, there may be a buildup of material blocking circulation flow.

(1) Unplug and drain the CleanStation™ per the Operating instruction step 10 (remember to wear safety protection).

(2) Remove and dry the tank lid before placing on another surface. If removing the material does not increase the circulation move onto step 3.

(3) Inspect the suction strainer (see Figure 4) and remove any material deposits. It maybe necessary to replace the strainer if the mesh becomes excessively coated with deposits.

(4) Using a 7/16" socket, loosen (but **do not** remove) the 1/4"-20 nuts (see Figure 4) located behind the holes at the top of the jet plate. Remove the jet plate by lifting using the top holes provided for the 1/4”-20 nuts. As with the tank lid, dry before setting aside.

(5) If a significant amount of material is found and removed from the suction strainer, the manifold may not need cleaning; skip to step (9) to re-install the jet plate. If the manifold appears to have material blocking the holes, proceed to the next step (6) to remove and clean the manifold.

(6) Using a 5/16" socket, loosen the hose clamp connecting the manifold the the hose and remove the 8-32 nuts with a 3/8” socket. Then completely remove the pipe clamps and manifold (see Figure 4).

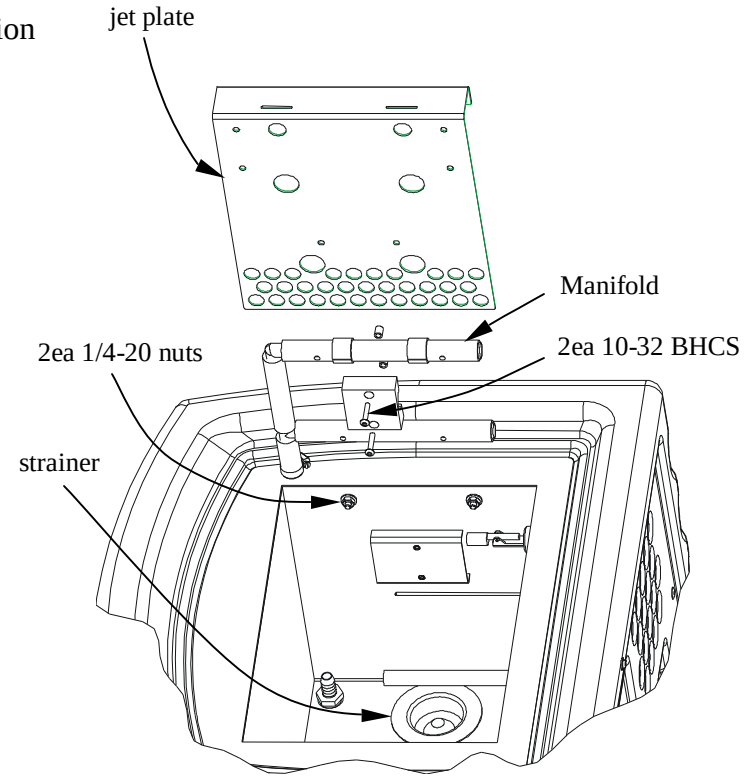


Figure 4

Maintenance (continued)

(7) Remove material blocking the jets by either pulling the material through the holes, or flushing through the inlet of the manifold.

(8) Re-install the manifold and tighten the hose clamp.

(9) Re-install the jetplate. Slide the jet plate between the washers and the tank. Be careful not to over-tighten the nuts, for easier removal in the future.

- The CleanStation™ requires very little maintenance. Keep it clean by wiping it down with a damp cloth after use. Remember to always use neoprene safety gloves and eye protection.
- The CleanStation™ pump and motor are factory sealed and **do not** require any lubrication or seal replacement.
- When replacing fuses, always unplug power to the CleanStation™ and keep the power cord in view. Keeping the power cord in view will ensure the CleanStation™ is not inadvertently plugged back in by someone else.
- Any failure of the product due to negligence or misuse by the Customer **voids the warranty**. Using the machine for anything other than its intended purpose or changing anything that results in a failure also **voids the warranty**. Changing any control parameter other than time and temperature (do not exceed 150 degrees) **voids the warranty**. The Customer is expected to follow the guidelines for operations stipulated in the Installation, Operation, and Maintenance Instructions.

Troubleshooting

If CleanStation™ does not run - no power to the display.

• Verify the power switch is turned on, the system is plugged into a power source, and that power is available.

• Verify adequate water level in the tank. If water level in the tank drops below 1 inch (approximately) from the top of the tank, CleanStation™ is designed to power itself off.

• Check for a blown fuse. There is one fuse located behind the tank, facing down. After having thoroughly drained and unplugged the system from it's power source, tip the unit so that it's resting on it's left side (when viewed from the front panel). Locate the fuse (see Figure 5) looking up from the bottom of the system, behind the tank. After completely removing the fuse, check with an ohm meter. A blown fuse usually indicates some other problem … with the system still on it's side, spot check that all wires are undamaged.

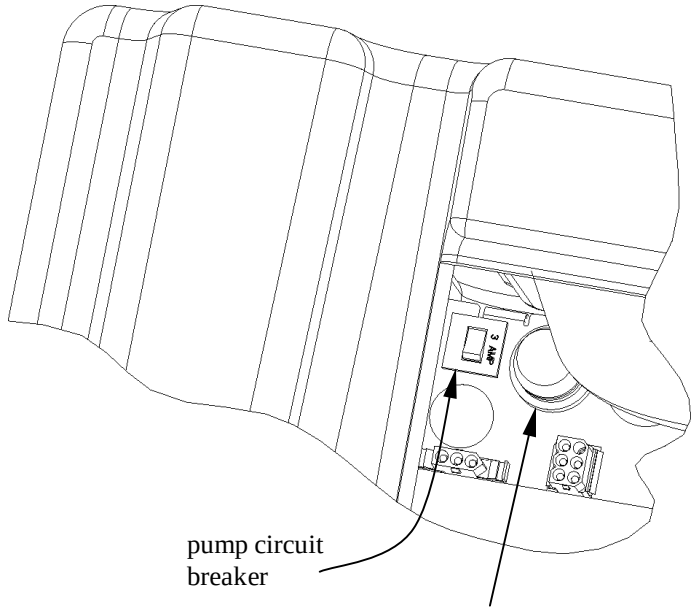


Figure 5

If CleanStation™ heats with no water agitation.

• Check for tripped pump circuit breaker. There is a circuit breaker located behind the tank, facing down. After having thoroughly drained and unplugged the system from it's power source, tip the unit so that it's resting on it's left side (when viewed from the front panel). Locate the circuit breaker (see Figure 5) looking up from the bottom of the system, behind the tank. The circuit breaker has tripped if the position of the breaker switch is showing white. Reset the breaker by pushing it in.

• If the pump motor feels hot (to the touch), the temperature sensitive thermo switch may be tripping due to high heat. Remove any obstructions from the drain filter and jets (refer to the maintenance section) and allow the pump to cool down before restarting.

Troubleshooting (continued)

Parts take an abnormally long time to clean

- Check the temperature of the water. Optimal temperature is 150F.
- Cleaning times are faster with fresh cleaning solution. Change the solution whenever the water gets too dark (coffee brown in color).
- Check that the suction strainer and the manifold jets are clear of debre per the maintenance instructions.

Controller display reads . . .

- Er4: Please contact PM Technologies.
- Er5: Please contact PM Technologies.

Machine will not stay running

- Check that the water level is 1” from the top of the tank.
- Check that the suction strainer and the manifold jets are clear of debre per the maintenance instructions..

Technical support

- Telephone (USA) 1-763-425-1383 extension 303. Office hours 8 a.m. to 5 p.m. Monday through Friday, Central Standard Time.
- If the CleanStation™ is no longer under warranty and no service contract has been purchased, there may be a charge for tech support calls. Customers will be made aware of these charges at the time of the call.
- Email: support@pm3tech.com
- World Wide Web URL: http://www.cleanstationsrs.com

Warranty Information

PM Technologies warrants that the CleanStation™ part cleaning system will be free of defects in materials and workmanship for a period of one year from the date of shipment. If the product proves defective during the warranty period, PM Technologies, at its option, will:

- repair the product by means of telephone support or send parts at no charge, customer pays for shipping.

Under this product warranty, the Customer must notify PM Technologies or it authorized service representative of the defect before the expiration of the warranty period. To obtain service under this warranty, the Customer must first contact PM Technologies Telephone Support personnel or that of its authorized service representative. Telephone Support personnel will work to resolve issues professionally and quickly, however the Customer must reasonably assist PM Technologies or its authorized representative.

If telephone support is unsuccessful by PM Technologies or its authorized service representative the machine must be shipped back to PM Technologies and PM Technologies will provide warranty repair (if machine is still under warranty) for parts and labor for products purchased in the United States and Canada.

If the Customer's product contains features that enable PM Technologies or its authorized service representative to diagnose and repair problems with the product remotely, PM Technologies may request that the Customer allow such remote access to the product.
In the maintenance of the product, PM Technologies may use new or equivalent to new parts or assemblies for equal or improved quality. All defective parts and assemblies become the property of PM Technologies. PM Technologies, at its option, may request the return of these parts.

Doing any of the following **voids the warranty**: 1) Any failure of the product due to negligence or misuse by the Customer. 2) Using the machine for anything other than its intended purpose or changing anything that results in a failure. 3) Changing any control parameter other than time and temperature (do not exceed 150 degrees). 4) Running the machine with its filter off. 5) Using chemicals that have not been pre-qualified by PM Technologies. The Customer is expected to follow the guidelines for operations stipulated in the Installation, Operation, and Maintenance Instructions, **which includes the normal industry safety practice, of plugging the machine into a 115VAC ground fault interrupt outlet.**